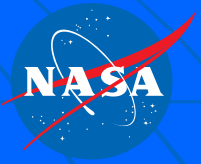


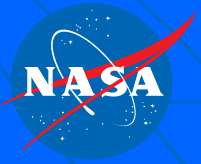
Environmental Assessment for the Proposed Commercial Vertical Launch Complex at J.F. Kennedy Space Center February 2008





The NEPA Process

Mario Busacca
KSC Environmental Program Branch

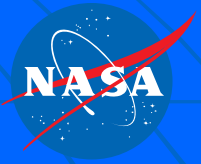


NASA is developing an Environmental Assessment for CVLC

Why is an Environmental Assessment (EA) Being Prepared?

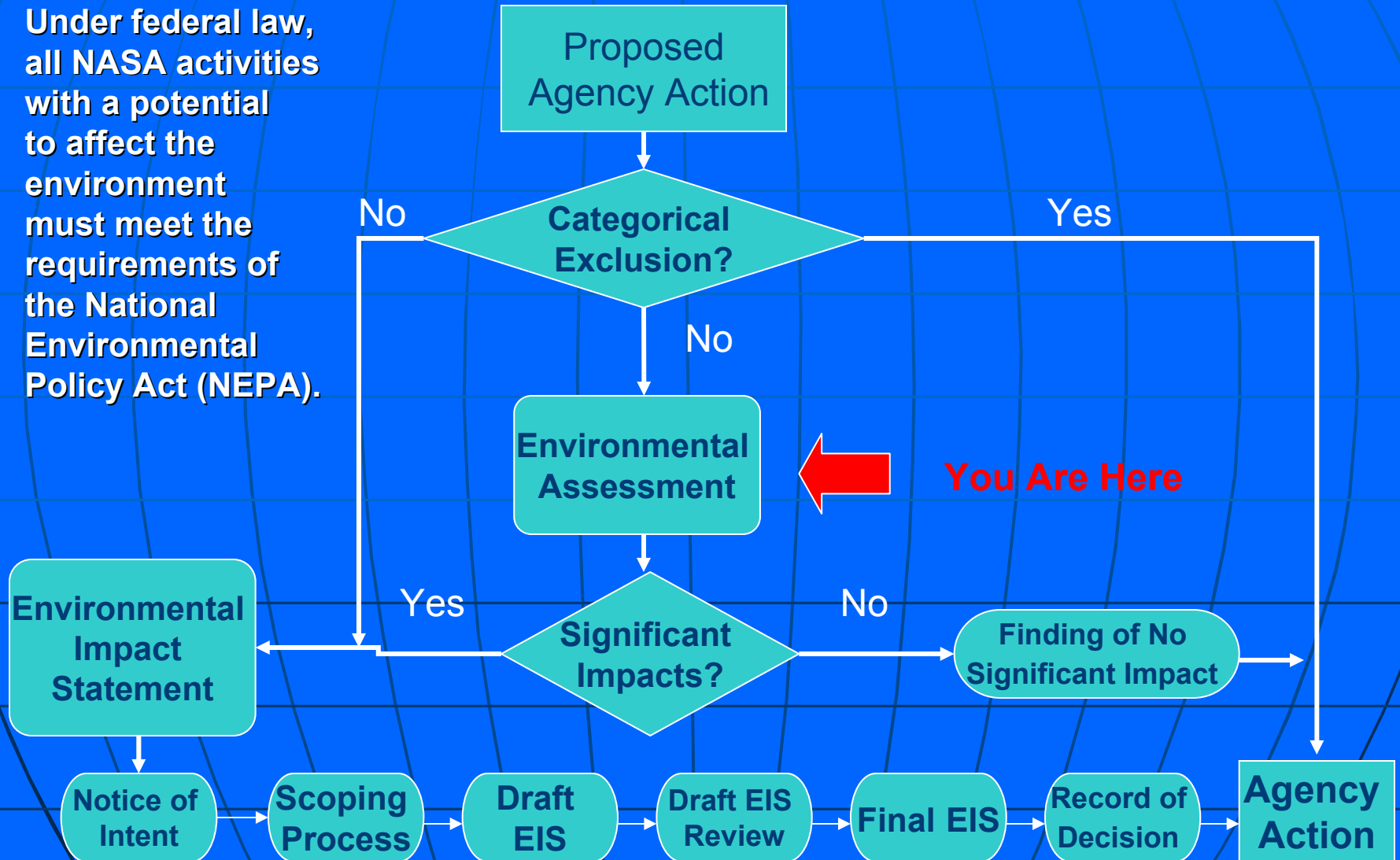
An EA is prepared pursuant to National Environmental Policy Act (NEPA) to determine whether a federal action might significantly affect the environment and thus require a more detailed environmental impact statement (EIS).

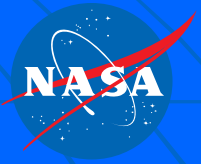
Under NEPA, “environment” includes the physical (air, water, land) and biological (plants, animals) environment, as well as human relationships to the environment (i.e., archeological, cultural, health, safety, jobs, housing, schools, and aesthetics).



NEPA Process

Under federal law, all NASA activities with a potential to affect the environment must meet the requirements of the National Environmental Policy Act (NEPA).





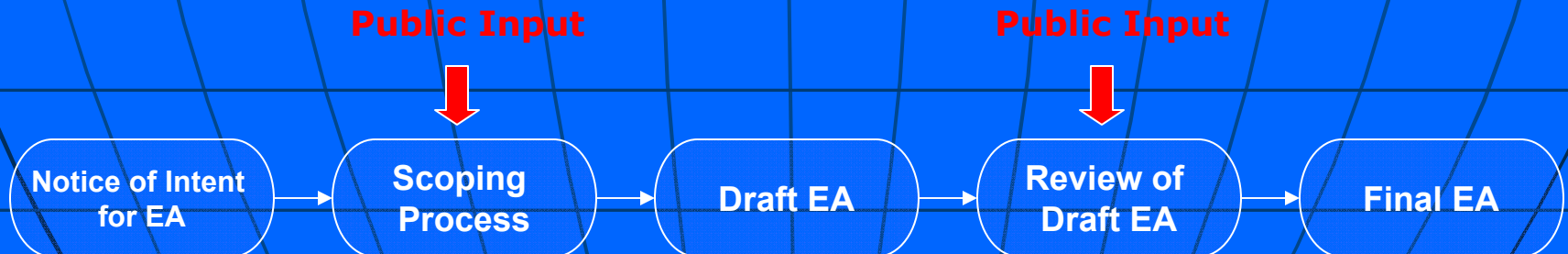
The NEPA Process for the CVLC Proposal

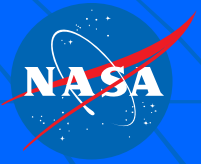
NEPA does not normally require that an EA include gathering public comments to define the issues that should be analyzed (referred to as Scoping).

However, due to the expected level of interest in the CVLC project, KSC is conducting a formal Scoping process, including a series of meetings to inform and involve the public.

Scoping involves collecting questions and input on issues that the public suggests should be addressed.

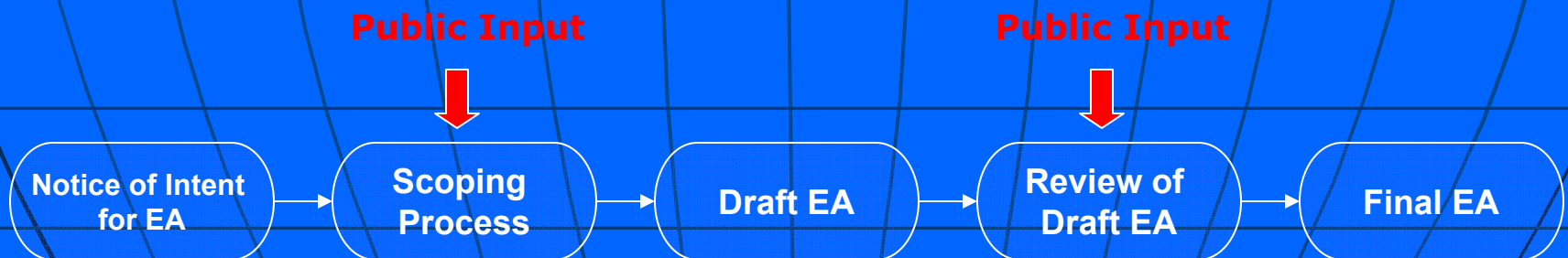
Following scoping, a Draft EA will be prepared. The Draft EA will be available for public review and comment, after which the Final EA will be prepared.

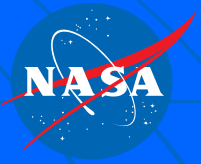




The Schedule for this Environmental Assessment

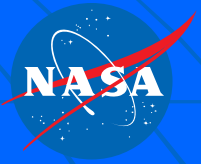
- | | |
|---------------|----------------------------|
| ■ End of Feb | Scoping Begins |
| ■ Mid April | Scoping Ends |
| ■ Mid July | Draft EA Released |
| ■ 30 days | Public Review |
| ■ Mid August | Public Review Comments Due |
| ■ End of Sept | Final EA Released |





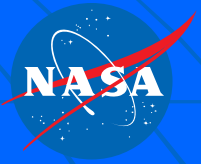
Commercial Vertical Launch Complex Project Overview

Jim Ball
KSC Spaceport Development Manager



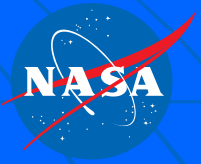
Purpose & Need

- Implement National Space Policy to provide stable and predictable access to Federal spaceports and ranges to encourage and facilitate a viable U.S. commercial space transportation industry
- Enable and support privately developed and operated space launch systems capable of reliably servicing NASA and commercial payload customers
- Expand the user base for KSC institutional capabilities to help reduce launch and related support costs for all users



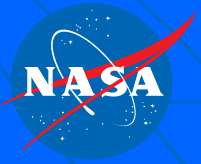
Jobs & Economy

- Benefit the nation's economy by improving the competitive position of the U.S. commercial launch industry
- Stimulate additional private sector investment in U.S. space capabilities and enterprises in earth orbit and beyond
- Adding jobs and attracting new space ventures to KSC and Florida



Jobs & Economy

- Preliminary data suggest site construction personnel could be up to a peak of 400 trades workers
- Preliminary data suggest on-site personnel for operations and launch processing could be up to 200
- Additional jobs resulting from related but offsite activities (e.g. manufacturing, assembly, payloads) have not been estimated

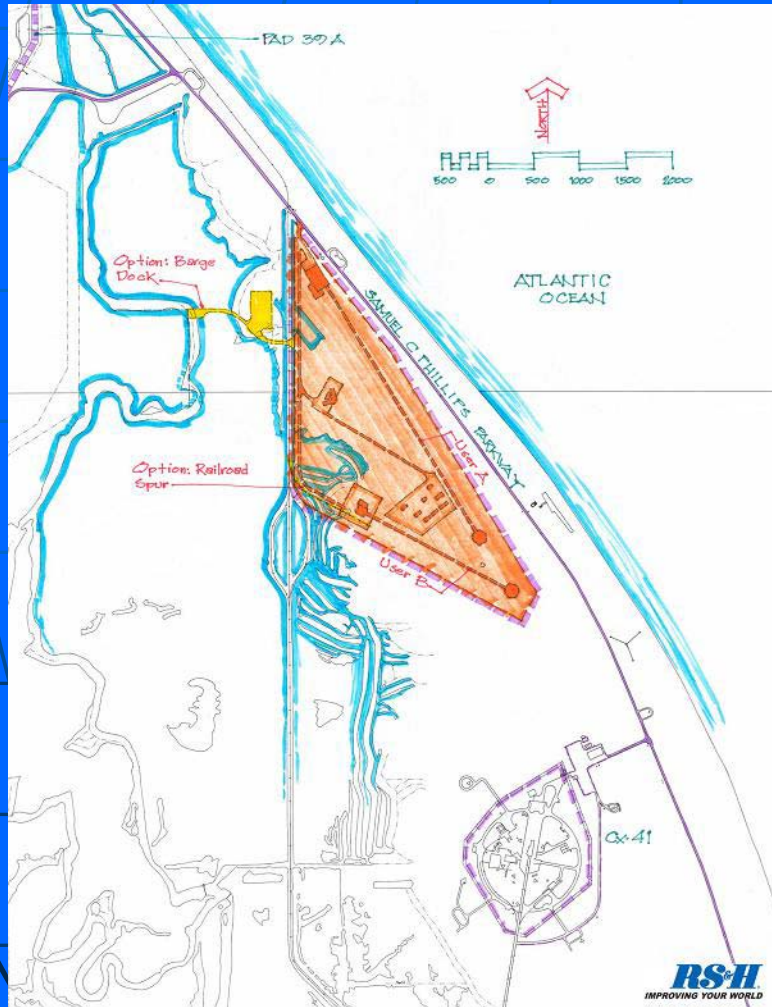


Conceptual Launch Complex Facilities

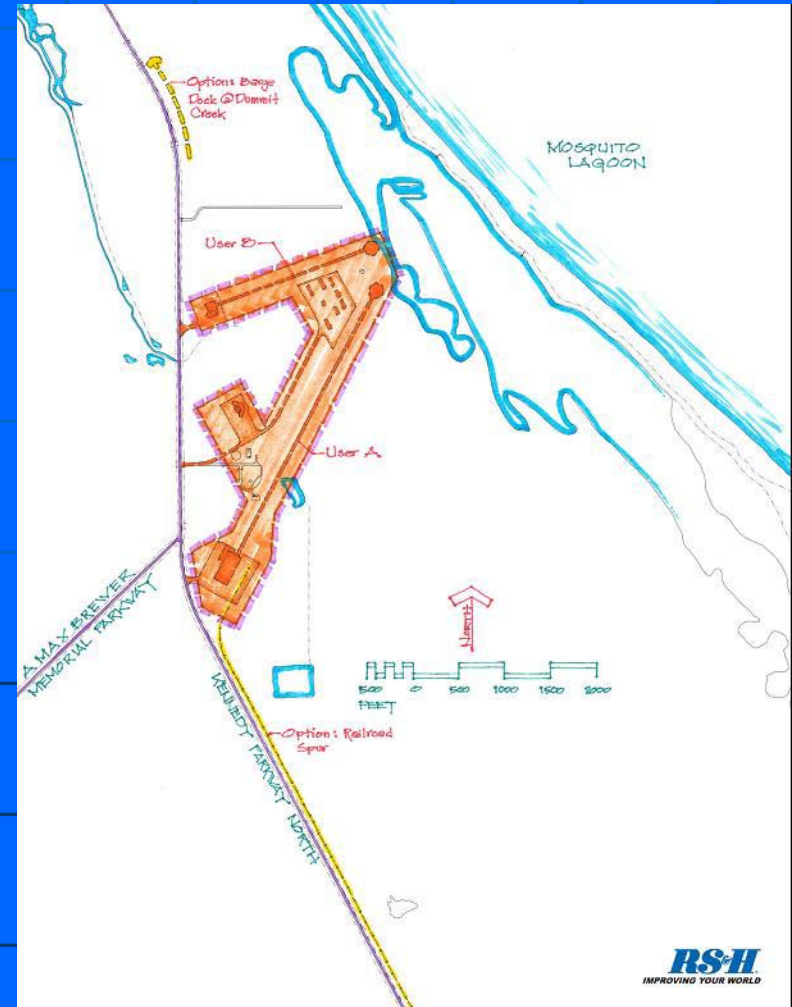
- For purposes of site and environmental analysis, a conceptual launch complex to accommodate multiple users was developed to have the following characteristics:
 - Two launch pads within the proposed Complex, one supporting horizontally integrated launch vehicles, the other supporting vertically integrated vehicles
 - Separate integration facilities for each pad
 - Shared propellant storage facilities, and a common support facility with areas for each user
 - A launch systems test and development facility
 - A perimeter encompassing about 200 acres
- Conceptual site layouts were developed for each site

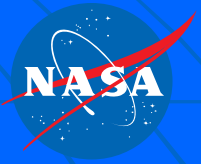
Conceptual Site Layouts

Site 1



Site 2



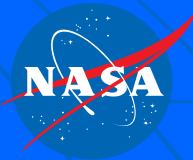


Launch Vehicles & Potential Users

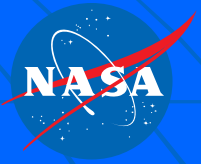
- Launch vehicles with a liftoff thrust of up to 2 million pounds
 - Systems in development to meet NASA's Commercial Orbital Transportation Services (COTS) needs (approx. 1 million lbs)
 - Systems comparable to Atlas V and Delta 4 class (approx. 2 million lbs)

- Potential users of commercial launch services
 - NASA COTS to International Space Station
 - Other NASA and U.S. Government customers
 - Commercial human spaceflight operations (e.g. Bigelow Aerospace and others)
 - Commercial satellites (e.g. telecom, remote sensing, orbital facilities)
 - Future commercial operations beyond earth orbit

Site Operations



- Site development and operations to be performed by non-NASA entity/entities under license by FAA
- Potential site operating impacts will be generically assessed and may require further environmental analysis for FAA license decisions
- Concept envisions vehicle integration operations, fueling from on-site storage vessels, and launch
- Concept envisions a test and development facility to improve launch system technologies
- Manufacturing, payload processing, and launch control performed at other locations
- Site safety, security and environmental compliance operations will be developed and implemented by site operator

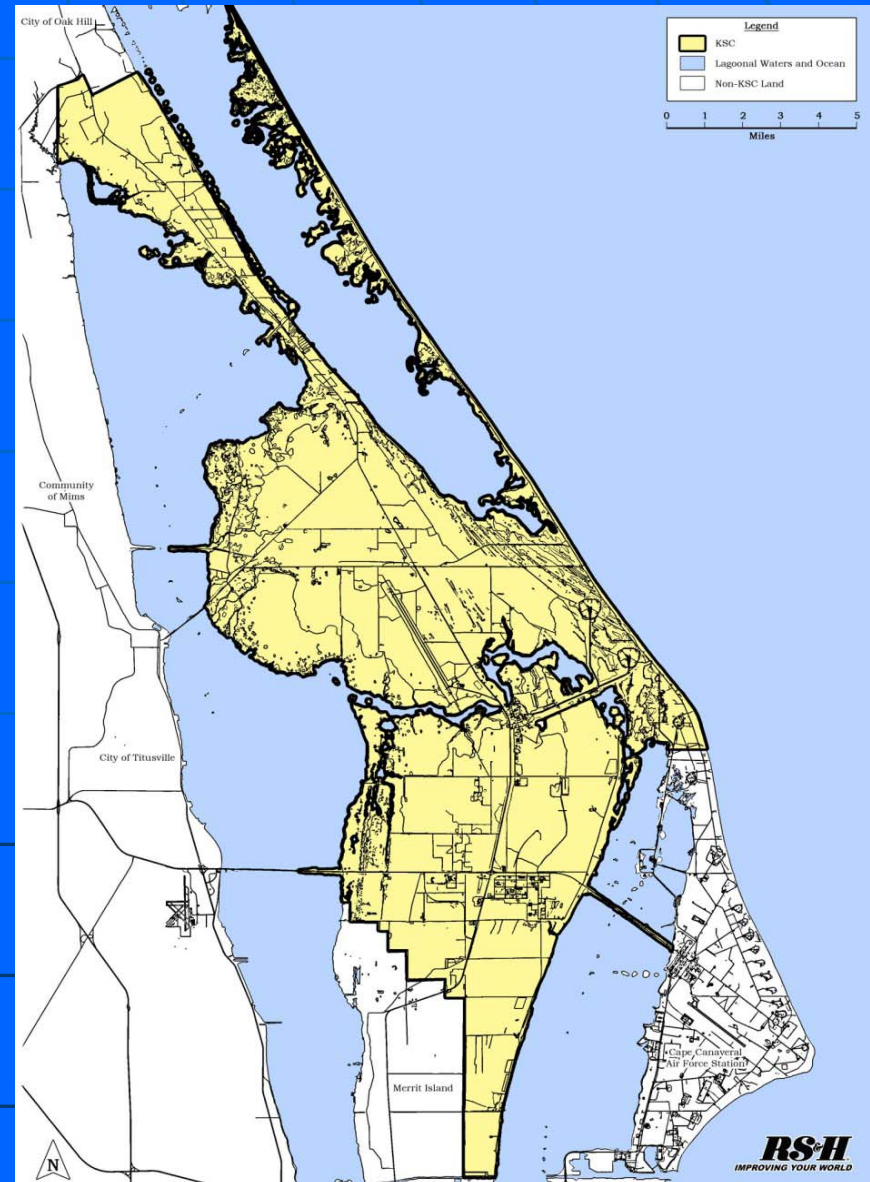


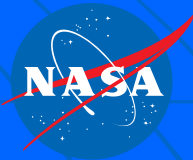
KSC Area Studied

Entire land area acquired in 1960s to support U.S. civil space launch operations, beginning with Apollo-Saturn lunar landing program

Includes areas later designated for overlay management by Dept. of Interior as Merritt Island National Wildlife Refuge and Canaveral National Seashore

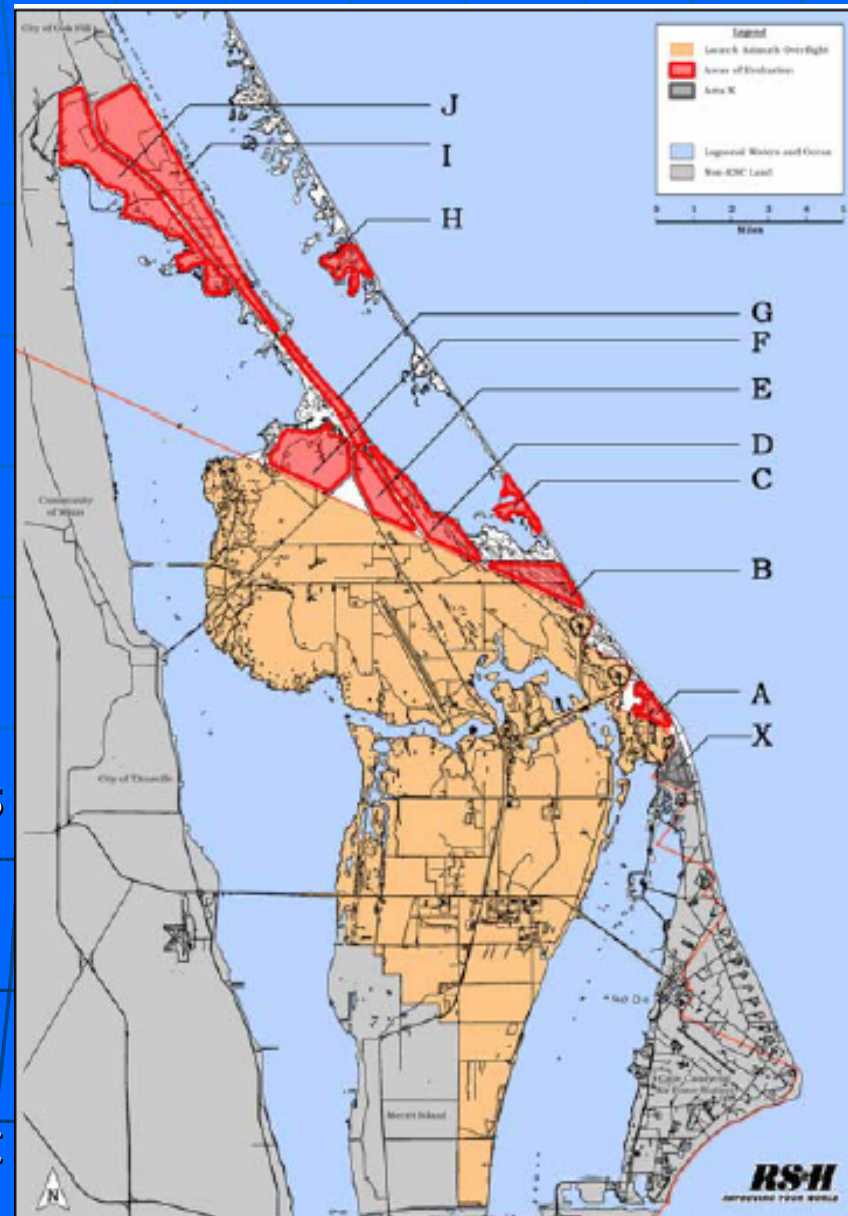
To date, approximately 7500 acres, or 5%, of KSC has been developed in support of NASA activities

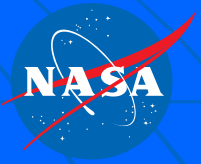




Preliminary Site Evaluation

- NASA contracted with Reynolds Smith & Hill to study all 140,000 acres of KSC's jurisdictional boundaries
- Land on Cape Canaveral Air Force Station is not under NASA's ownership or jurisdictional control
- Study used pass-fail criteria to eliminate sites that:
 - Overfly existing KSC or CCAFS facilities
 - Are closer than 5 miles to homes or businesses off KSC
 - Are vulnerable to inundation by Category 1 storm surge
- Acquisition of additional private or public land adjacent to KSC was not considered

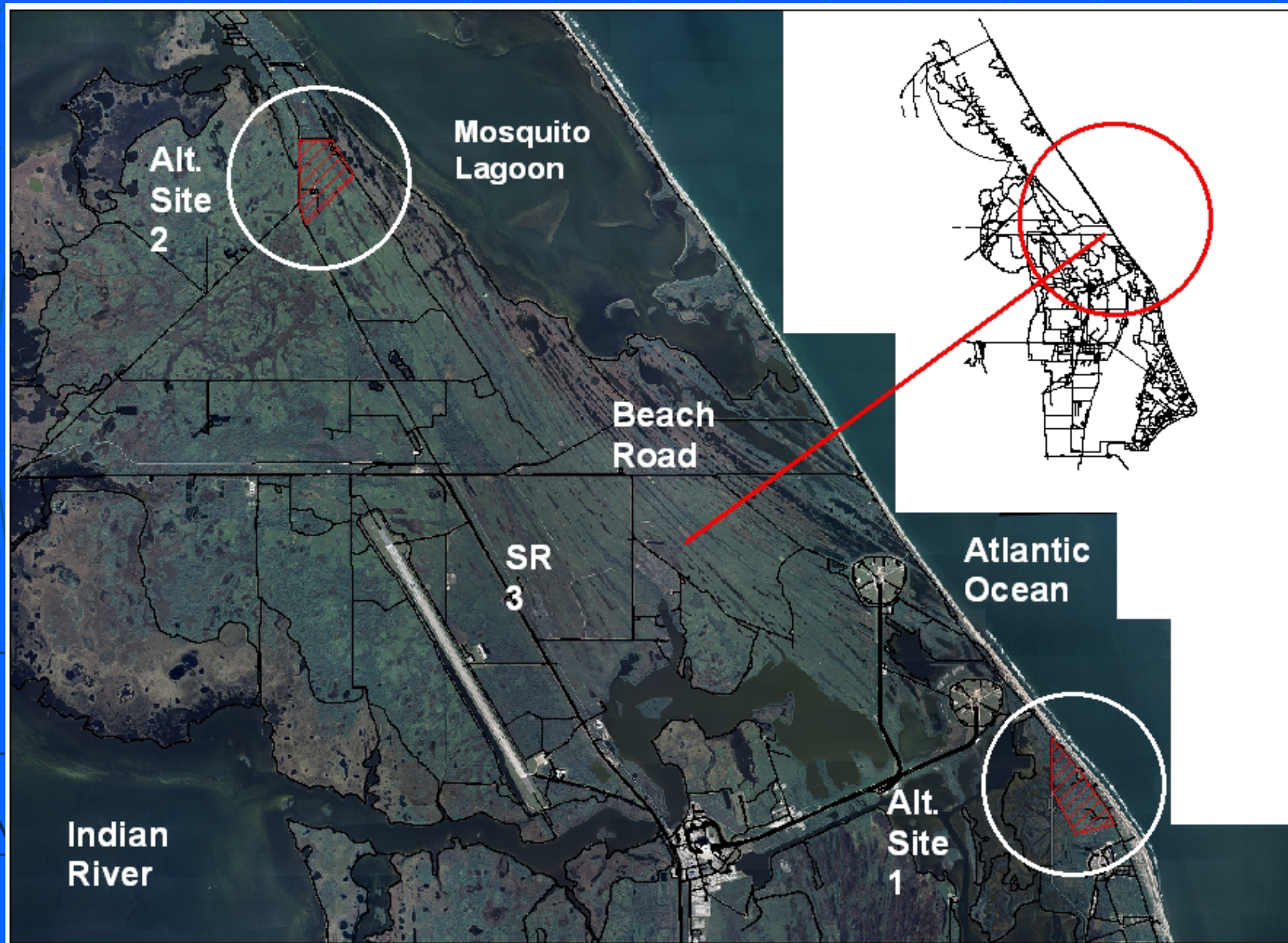
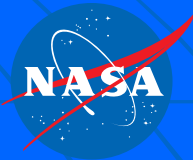


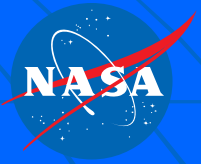


Site Alternatives

- Two sites were identified that appear to technically support the conceptual CVLC without compromising NASA's current or future needs
- A preferred site alternative will be identified in the Draft Environmental Assessment for public review

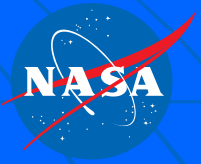
Alternative Site Locations





Project Alternatives and Environmental Issues

Jane Provancha
Dynamac Corporation

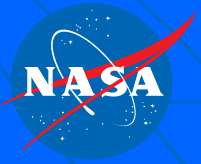


Environmental Concerns & Evaluation Process

The EA will evaluate a variety of factors associated with each Alternative and the degree of impact to the environment.

Concerns to be assessed include (but are not limited to):

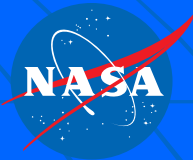
- local job market & economy
- water and air quality
- wetlands and other habitats
- State & Federally protected species
- archaeological and historical resources
- birds, wildlife, and plants
- access, traffic, and utilities
- public uses (hunting, fishing, public access restrictions, etc.)



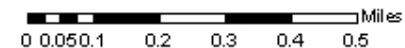
Potential Impacts on Public Use Areas

- Potential impacts to existing levels of public use access (e.g. beach, birding, fishing, hunting, kayaking, etc.) will be assessed for both sites
- Some important considerations:
 - Both alternative sites are more distant from the existing public use beach area than Space Shuttle Pad 39-B
 - The proposed CVLC and the commercial launch systems that use it will not be Government-owned national assets
- Specific flight safety and launch preparation analysis that may influence public safety considerations will be considered later in FAA licensing actions

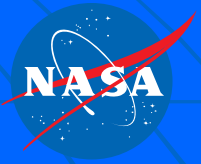
Aerial View of Site 1



Commercial Vertical Launch Complex Site 1



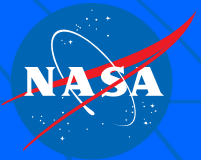
Alternative 1



Issues Identified to Date:

- Archeological sites
- Location between two active launch pads (i.e. schedules)
- Species of concern:
Florida Scrub-jay, southeastern beach mouse, eastern indigo snake, gopher tortoise, several wading bird species habitats, sea turtle nesting
- Wetlands

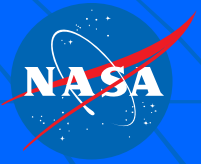
Aerial View of Site 2



Commercial Vertical Launch Complex Site 2

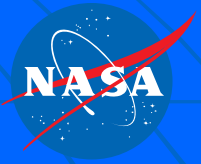


Alternative 2



Issues Identified to Date:

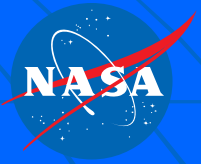
- Wetlands
- Species of concern:
Florida scrub-jay, eastern indigo snake, and gopher tortoise habitats, waterbirds, wading birds, manatee, and sea turtle nesting
- Close proximity to Mosquito Lagoon and marshes
- USFWS public use trail
- Public access (Playalinda Beach and Refuge)
- No rail access
- Utility availability



Environmental Concerns & Evaluation Process

No Action Alternative:

- Pursuant to NEPA, the range of reasonable alternatives must include the No Action Alternative
- Under this alternative, the CVLC would not proceed as proposed



Environmental Concerns & Evaluation Process

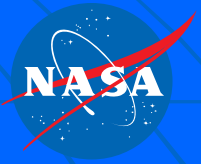
Data reviews and field site visits by resource experts have begun

The environmental consequences (short and long-term) of each of the three Alternatives will be compared and contrasted.

The results of the evaluation will be detailed in the Draft EA, which will be available for government and public review and comment



Federal Aviation
Administration



The FAA Process

Stacey Zee
FAA, Washington, D.C.



FAA Licensing Authority and Process

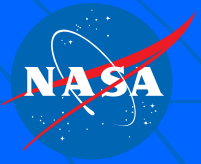
49 U. S. C. Subtitle IX, ch. 701

Authorizes the FAA to license commercial launch and reentry activities and the operation of launch and reentry sites as carried out by U.S. citizens or within the United States

Directs the FAA to:

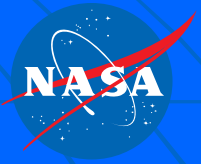
Exercise this responsibility consistent with public health and safety, safety of property, and the national security and foreign policy interests of the United States, and

Encourage, facilitate and promote commercial space launches and reentries by the private sector



FAA Licensing Authority and Process

- **AST issues licenses for:**
 - **Launch (orbital and suborbital)**
 - **Reentry (purposeful)**
 - **Operation of a launch site**
 - **Operation of a reentry site**
- **AST issues experimental permits for:**
 - **Developmental reusable suborbital rockets**
- **AST does not license a launch, reentry, operation of a launch site, operation of a reentry site, or other space activity carried out by the Government**



FAA Licensing Authority and Process

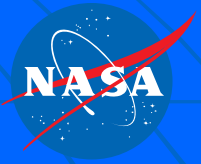
LAUNCH SITE OPERATOR LICENSE

- **Authorizes a licensee to operate a launch site in accordance with the representations contained in the application**
- **Remains in effect for five years**
- **May be surrendered, suspended, or revoked**
- **Renewable upon application**
- **Subject to Compliance Monitoring and Safety Inspections**



Responsibilities of a Licensee

- **Control of Public Access**
- **Explosive Siting**
- **Agreements with Air Traffic and US Coast Guard**
- **Scheduling Hazardous Operations of its Customers**

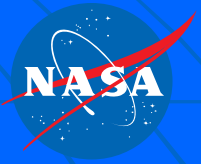


Public Review & Comment Process

NASA seeks to actively involve the public in its decision-making process regarding the CVLC. Input from the public is welcomed and actively solicited.

The floor is now open for public comment.

Please remember that this meeting is designed to solicit comments regarding the issues that should be addressed in this Environmental Assessment. As such, answers to specific questions that have not yet been determined, cannot be provided at this meeting.



Continuing the Public Review & Comment Process

For More Information Contact:

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Florida 32899
telephone: 321-867-8456
fax: 321-867-8040
e-mail: KSC-CVLC@nasa.gov**

Or Visit:

<http://environmental.ksc.nasa.gov/projects/ksc-cvlc.htm>